

# PATENT SEARCH REPORT

SEARCH TYPE: PRIOR ART SEARCH

TITLE: Man Overboard Wristband

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Melinda Smith

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CARDINAL PROJECT MANAGER: Stephen Smetana

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## All References

#	Reference #	Title	Company	Authors	Pub / Issue Date
1	<b>WO2020152659</b>	SYSTEM AND METHOD FOR RESCUING AN OVERBOARD PASSENGER		PHYFER, Robert Daniel; DOMIGAN, Lauren	7/30/2020
Abstract	A system and method for rescuing an overboard passenger that provides a system for connecting individuals wirelessly to a base location, especially for maritime applications. The method accomplishes this by providing a wearable transmitter that is equipped to send signals to a centralized computer, enabling response to the wearable transmitter being outside of a certain radius or pre-mapped area. The wearable device decreases the time it takes for a maritime vessel to rescue a person who has fallen overboard. Maritime vessels are enabled to receive an alarm as soon as a person falls overboard and becomes out of range of the wireless connection. The system and method are suitable for sailors, fishermen, yachtsmen, passengers, and/or anyone on the sea. In addition, the system can be modified to be used by individuals with memory loss such as Alzheimer's, Dementia, or other medical diseases that require some monitoring over the individuals.				
page 1, In 30 to page 2, In 10	An objective of the present invention is to provide systems and methods for overboard rescue. In the preferred embodiment of the present invention, the present invention provides a waterproof wireless-enabled (preferably following IEEE 802.1 lx protocols) wearable device able to send an alarm when the connection to the host is lost. The wearable device of the present invention decreases the time it takes for a maritime vessel to rescue a person who has fallen overboard. The present invention enables maritime vessels to receive an alarm as soon as a person falls overboard and becomes out of range of the preferably IEEE 802.1 lx connection. The present invention is suitable for sailors, fishermen, yachtsmen, passengers, and/or anyone on the sea. In addition, the present invention can be modified to be used by individuals with memory loss such as Alzheimer's, Dementia, or other medical diseases that require some monitoring over the individuals.				
page 3, In 5 to page 4, In 13	<p>The method of the present invention follows an overall process that allows for monitoring of the user's position while the user is connected to the at least one wearable device. The overall process, as represented in FIG. 2, begins by pinging the wearable device with the onboard computing system (Step C). Thus, the wearable device is in wireless communication with the onboard computing system. A date-and-time entry and a geospatial location entry are relayed from the wearable device to the onboard computing system, if the wearable device is in communication range of the onboard</p> <p>computing system (Step D). By providing this information, the onboard computing system is effectively made aware of the user location at an exact time. Next, the date-and-time entry and the geospatial location entry are logged into the user profile with the onboard computing system (Step E). In this way, the date-and-time entry and the geospatial location entry are associated with the appropriate user account. An out-of-range alarm for the user profile is outputted with the onboard computing system, if the wearable device is not in communication range of the onboard computing system (Step F). This out-of-range alarm may take the form of an audible or visual alert, including lights, alert notifications, sirens, speaker noises, and a variety of other such stimuli capable of notifying an administration of the out-of-range status of the user profile.</p> <p>Finally, a plurality of iterations for Steps C through F is executed at a constant interval (Step G). Therefore, the onboard computing system is equipped to receive periodic notifications that constantly monitor the user's location at specific times.</p>				
2	<b>US20200178057</b>	System and method for monitoring a spatial position of a mobile transmitter, man-over-board detection system	ROHDE & SCHWARZ	Haubs, Matthias	6/4/2020
Abstract	A system and method for monitoring a spatial position of a mobile transmitter is provided. In particular, the mobile transmitter may be attached to or included in an object of interest. By analyzing the signal strengths of radio frequency signals emitted by the transmitter, a spatial position of the mobile transmitter can be determined, and it is possible to detect whether or not the spatial position of the mobile transmitter is outside an allowable area. By applying the monitoring of the spatial position to a radio frequency system on a vessel, a reliable man-over-board detection can be achieved.				
para [0002]-[0003]	<p>[0002]Although applicable in principle to any system for detecting a spatial position of an object, the present invention and its underlying problem will be hereinafter described in conjunction with detecting a man-over-board event on a vessel.</p> <p>[0003]A man-over-board event is an event of a person falling from some height into the water. There are many elements which make the man-over-board events dangerous. If the air or water temperature is cold, even a relative short exposure can lead to death. Furthermore, man-over-board events may occur, for example at night or in high seas. In such cases, it might be rather difficult to detect the man-over-board event I good time and to start a rescue within a short time.</p>				
para [0028]	[0028]For example, the alert indication unit may generate an optical and/or acoustical alert. Additionally, or alternatively, it may be possible to generate any other appropriate signal, for example a signal for an automated initialization of a rescue operation.				
para [0042]	[0042]In a possible embodiment, the system comprises at least one mobile transmitter. The mobile transmitter may be configured to emit a radio frequency signal. The mobile transmitter may be further configured to be attached to a target of interest or included in a target of interest. For example, the mobile transmitter may be attached to a person, for example a crew member of a vessel. The mobile transmitter may be securely fixed to a person or wearable equipment of the person. Alternatively, the mobile transmitter may be securely included in a wearable equipment. As already mentioned above, the mobile transmitter may be a transmitter of a mobile communication device. However, it is understood that the mobile transmitter may be also a separate device for monitoring the spatial position of an object of interest without any additional functionality.				
3	<b>US10013863</b>	Radio apparatus	ICOM INCORPORATED	SEKIYAMA, YOSHIO	7/3/2018
Abstract	A radio apparatus includes a Man-Overboard detection unit, a control unit and a distress key. The Man-Overboard detection unit outputs a Man-Overboard signal when the radio apparatus has fallen to a water surface or into water. The control unit generates a distress signal including a distress type. A distress key outputs a distress key manipulation				

	signal to the control unit when the distress key is manipulated. When the control unit receives the Man-Overboard signal from the Man-Overboard detection unit, the control unit automatically sets a distress type of the distress signal to Man-Overboard.
col 3, ln 31-47	<p>The radio apparatus 1000 has an appearance that an antenna 120 is installed on the top surface of a body 110. Because of employment, as a power source, of a lithium-ion battery which is light and of a large capacity and other reasons, the radio apparatus 1000 is light as a whole. With an additional feature that the case 111 is water-proof, the radio apparatus 1000 does not sink, that is, is kept afloat, even if it falls into water. In this specification, for the sake of convenience, falling to a water surface or into water is referred to as "Man-Overboard".</p> <p>The radio apparatus 1000 is configured in such a manner that when the radio apparatus 1000 has fallen to a water surface or into water, a light-emitting element such as an LED blinks and, at the same time, a Man-Overboard alarm sound is emitted to inform the user of the fact that it has fallen to a water surface or into water as well as its current position.</p>

4	<b>US20200216153</b>	Overboard Tracking Device	Pallas LLC	Verlinden, Christopher; Kubicko, Jacquelyn S.	7/9/2020
Abstract	An overboard tracking device is an apparatus which facilitates the location of individuals wearing Personal Flotation Devices (PFDs) or similar survival devices in a body of water. The apparatus includes a prismatic buoyant housing, a power source, at least one switch, a controller, a transceiver, a thermionic layer, an antenna layer, and a waterproof casing. The prismatic buoyant housing maintains the apparatus above water. The power source provides power for the operation of the apparatus. The at least one switch enables manual or automatic activation or deactivation for the apparatus. The controller processes the data and signals received from external radar sources. The transceiver facilitates the sending and receiving of radio wave signals to/from external radar sources. The thermionic layer generates the power stored in the power source. The antenna layer transmits radio waves from/to the transceiver. The waterproof casing prevents contact of the electronic components with water.				
para [0018]	[0018]The present invention provides an overboard tracking device. The overboard tracking device facilitates the location of individuals wearing Personal Flotation Devices (PFDs) or similar survival devices in a body of water. In a preferred embodiment, the present invention comprises a prismatic buoyant housing 1, a power source 2, at least one switch 3, a controller 4, a transceiver 5, a thermionic layer 6, an antenna layer 24, and a waterproof casing 7. The prismatic buoyant housing 1 maintains the present invention above water so the user can easily find the present invention. The power source 2 provides power for the operation of the present invention. The at least one switch 3 enables the user to activate or deactivate the present invention immediately to send a distress signal. The controller 4 processes the data and signals received from external radio sources to generate the distress signal. The transceiver 5 facilitates the sending and receiving of radio wave signals to/from external radio sources to transmit the distress signal. The thermionic layer 6 generates the power stored in the power source 2 by the thermal differential between the thermionic layer 6 and the external environment. The antenna layer 24 transmits radio waves from/to the transceiver 5 that contain the distress signals. The waterproof casing 7 prevents contact of the electronic components with the surroundings.				
para [0029]	[0029]The present invention may further comprise an overboard alarm system. The overboard alarm system may comprise a vessel transmitter and an alarm module. The vessel transmitter can be located on a vessel or a transportation vehicle to passively track the location of the user while the user is with the vessel. The alarm module is integrated into the present invention to generate an alarm signal once the user falls overboard. The alarm module may utilize a plurality of movement tracking devices, such as an accelerometer or gyroscope, which monitor the movement of the user. The plurality of movement tracking devices may generate the alarm signal once a preset threshold is met, such as immediate acceleration or change of elevation relative to the position of the vessel transmitter. The vessel transmitter is wirelessly connected to the alarm module so when the vessel transmitter receives the alarm signal from the alarm module, an overboard notification is generated. The overboard notification is transmitted to appropriate users through multiple communication channels. In further embodiments, the alarm module may communicate with third-party systems to transmit the alarm signal through third-party communication channels.				

## Search History

Project Name: 3149.1  
Man Overboard Wristband

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Full text Coverage: Australia, Belgium, Brazil, Canada, Switzerland, China, Germany, Denmark, European Patent Office, Spain, Finland, France, United Kingdom, India, Japan, Republic of Korea, Sweden, Thailand, Taiwan, US United States of America, World Intellectual Property Organization (WIPO)

Bibliographic: (European) Austria, Bosnia and Herzegovina, Belgium, Bulgaria, Switzerland, Czechoslovakia, Cyprus, Czech Republic, East Germany, Denmark, Estonia, Spain, Finland, Georgia, Greece, Croatia, Hungary, Ireland, Iceland, Italy, Lithuania, Luxembourg, Latvia, Monaco, Moldova, Malta, The Netherlands, Norway, Poland, Portugal, Romania, Republic of Serbia, Sweden, Slovenia, Slovakia, San Marino, Turkey, Ukraine, Yugoslavia; (Asia) Eurasian Patent Organization, Gulf Cooperation Council, Hong Kong, Indonesia, Israel, India, Kazakhstan, Mongolia, Malaysia, Philippines, Russia, Singapore, Soviet Union, Thailand, Tajikistan, Taiwan, Uzbekistan, Vietnam; (North America) Canada, Costa Rica, Cuba, Dominican Republic, Guatemala, Honduras, Mexico, Nicaragua, Panama, El Salvador, Trinidad and Tobago; (South America) Argentina, Brazil, Chile, Colombia, Ecuador, Peru, Uruguay; (Australasia) Australia, New Zealand; (Africa) ARIPO, Algeria, Egypt, Kenya, Morocco, Malawi, OAPI, South Africa, Zambia, Zimbabwe

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Search 1:

CC=(US or DE) (Results 1000000)

Search 2:

1 and PA=(ThyssenKrupp or Atlas) (Results 13524)

Search 3:

1 and INV=((Martin w/2 Wilcox) or (Melinda w/2 Smith)) (Results 33)

Search 4:

2 and PD>20193107 (Results 1285)

Search 5:

3 and PD>20193107 (Results 0)

Search 6:

4 and (overboard or over-board) (Results 1)

Search 7:

4 and (boat or ship or vessel or maritime or cruise or bridge or water or ocean) (Results 495)

Search 8:

7 and (warn~ or alert~ or alarm~) (Results 26)

Search 9:

4 and ((warn~ or alert~ or alarm~) near (fall~ or over or overboard or water)) (Results 0)

Search 10:

4 and ((warn~ or alert~ or alarm~) and (fall~ or over or overboard or water)) (Results 55)

Search 11:

4 and ((warn~ or alert~ or alarm~ or fall~ or overboard or safety) and (wear or worn or wrist or wriststrap or wristband or bracelet or band or strap)) (Results 310)

Search 12:

11 and ((warn~ or alert~ or alarm~ or fall~ or overboard or safety) near (wear or worn or wrist or wriststrap or wristband or bracelet or band or strap)) (Results 4)

Search 13:

4 and (bridge or captain) (Results 87)

Search 14:

3 or 8 or 10 or 12 or 13 (Results 171)

Search 15:

171 not 3 (Results 533743)

Search 16:

14 not 3 (Results 138)

Search 17:

14 and PD>20193107 (Results 138)

Search 18:

4 and ((overboard or (over w/1 board)) or (fall\* w/2 water)) (Results 5)

Search 19:

4 and (water near (sense~ or sesor% or warn~ or alert~ or alarm~)) (Results 4)

Search 20:

1 and PD>20193107 (Results 716568)

Search 21:

20 and ((overboard or over-board or (over w/1 board) or (fall~ w/2 water)) near (sense~ or sensor% or detect~ or detection or detector% or monitor% or alert~ or warn~ or alarm~)) (Results 51)

Search 22:

PN=(EP3671682) (Results 1)

Search 23:

((man-overboard or overboard) near (sense~ or sensor% or detect~ or detection or detector% or monitor% or alert~ or warn~ or alarm~)) and (wrist or wristband or bracelet)) (Results 45)

Search 24:

23 and PD>20193107 (Results 1)

[05 July 2020 (05.07.2020)]

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About 8,390 results (0.26 seconds) for (man-overboard OR overboard)

About 2,120 results (0.30 seconds) for (man-overboard OR overboard) (alert OR alarm OR warning)

About 879 results (0.42 seconds) for (man-overboard OR overboard) (alert OR alarm OR warning) (wear OR worn OR bracelet OR wrist OR wristband OR watch)

About 222 results (0.46 seconds) for (man-overboard OR overboard) (alert OR alarm OR warning) (wear OR worn OR bracelet OR wrist OR wristband OR watch) (underwater) (sound OR acoustics OR speaker)

About 132 results (0.53 seconds) for (man-overboard OR overboard) (alert OR alarm OR warning) (wear OR worn OR bracelet OR wrist OR wristband OR watch) (underwater) (sound OR acoustics OR speaker) (bridge OR captain)

[05 July 2020 (05.07.2020)]

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